REMARKS

1. In paragraph 2 of the Official Action, the Examiner points out a number of informalities in the claims. The Applicants have amended the claims in accordance with the Examiner's suggestions and request that this objection be withdrawn.

2. In paragraph 4 of the Detailed Action the Examiner has rejected claims 1-54, 58, 59-99 and 103-107 as being anticipated by Dymetman et al (US 6,330,976). In response, the Applicants have sought to amend claims 1, 41, 43-46, 59, 86 and 89 to more clearly distinguish the claimed invention from the invention disclosed in Dymetman.

The Applicants submit that the invention claimed in claim 59 differs from Dymetman for at least the following reasons:

Dymetman does not disclose a *"method of producing a surface having a region... including the steps of:... disposing additional information within the region on the surface, wherein the steps of disposing the coded data and disposing the additional information are performed substantially simultaneously." (My emphasis added)*

The Applicants submit that Dymetman does not disclose simultaneous printing of the additional information and the coded data.

In contrast, Dymetman explicitly teaches away from simultaneous printing and teaches separate printing of coded sheets which are then supplied to a publisher (see col. 11, lines 46 to 65).

In relation to claim 1, Dymetman similarly does not disclose *"A region defined in relation to a surface, ... wherein ... the coded data and the additional data having been disposed within the region on the surface substantially simultaneously." (My emphasis added)*

The Applicants have further amended claims 1 and 59 to more clearly define the difference between coded data and additional data.

In light of these amendments the Applicants submit that amended claims 59 and 1 are novel in light of Dymetman and request that the Examiner reconsider this objection.

3. Since amended claims 1 and 59 are novel, the Applicants further submit that subsidiary

claims 55-57 and 100-102 are also novel and inventive in light of Dymetman.

CONCLUSION

It is respectfully submitted that all of the Examiner's objections have been successfully traversed. Accordingly, it is submitted that the application is now in condition for allowance. Reconsideration and allowance of the application is courteously solicited.

Very respectfully,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims

Claims 1 to 107 have been amended as follows:

1. (Amended) A region defined in relation to a surface, coded data and additional data being disposed within the region, wherein the coded data comprises machine-readable data which is substantially inscrutable to the average unaided human and is indicative of:

a region identity associated with the region; and

a plurality of points within the region,

wherein the additional data is human-readable data which is substantially visible to the average unaided human eye,

the coded data and the additional data having been disposed on the surface substantially simultaneously.

2. (Amended) ~~A~~ The region according to claim 1, wherein the coded data includes at least one tag, each tag being indicative of the region identity and the position of the tag within the region.

3. (Amended) ~~A~~ The region according to claim 2, wherein each of the tags includes:

first identity data defining a relative position of that tag; and

second identity data identifying the surface.

4. (Amended) ~~A~~ The region according to claim 3, including further tags that do not include both first identity data and second identity data.

5. (Amended) ~~A~~ The region according to claim 3, wherein the relative position is defined in relation to the surface.

6. (Amended) ~~A~~ The region according to claim 3, wherein the relative position is

defined in relation to a plurality of the other tags.

7. (Amended) ~~A~~ The region according to claim 3, wherein the first identity data identifies stored information defining the relative position, the stored information not being stored on the surface.

8. (Amended) ~~A~~ The region according to claim 3, wherein the first identity data and the second identity data together identify stored information defining the relative position.

9. (Amended) ~~A~~ The region according to claim 3, wherein the surface is defined by a substrate.

10. (Amended) ~~A~~ The region according to claim 9, wherein the substrate is laminar.

11. (Amended) ~~A~~ The region according to claim 3, wherein the tags are disposed at predetermined positions on the surface.

12. (Amended) ~~A~~ The region according to claim 11, wherein the tags are disposed on the surface within a tessellated pattern comprising a plurality of tiles, each of the tiles containing a plurality of the tags.

13. (Amended) ~~A~~ The region according to claim 12, wherein the tiles interlock with each other to substantially cover the surface.

14. (Amended) ~~A~~ The region according to claim 13, wherein the tiles are all of a similar shape.

15. (Amended) ~~A~~ The region according to claim 14, wherein the tiles are triangular, square, rectangular or hexagonal.

16. (Amended) ~~A~~ The region according to claim 12, wherein the tags are disposed stochastically within each of the tiles.

17. (Amended) ~~A~~ The region according to claim 16, wherein the first identity data of each of the tags includes index data indicating the tile within which the tag is disposed and position data indicating the tag's position within that tile.

18. (Amended) ~~A~~ The region according to claim 3, wherein each of the tags includes at least one common feature in addition to the second identity data.

19. (Amended) ~~A~~ The region according to claim 18, wherein the at least one common feature is configured to assist finding and/or recognition of the tags by associated tag reading apparatus.

20. (Amended) ~~A~~ The region according to claim 18, wherein the at least one common feature is represented in a data format incorporating redundancy of information.

21. (Amended) ~~A~~ The region according to claim 20, wherein the at least one common feature is rotationally symmetric so as to be rotationally invariant.

22. (Amended) ~~A~~ The region according to claim 20, wherein the at least one common feature is ring-shaped.

23. (Amended) ~~A~~ The region according to claim 3, wherein each of the tags includes at least one orientation feature for enabling a rotational orientation of the tag being read to be ascertained.

24. (Amended) ~~A~~ The region according to claim 23, wherein the at least one orientation feature is represented in a format incorporating redundancy of information.

25. (Amended) ~~A~~ The region according to claim 24, wherein the at least one orientation feature is rotationally asymmetric.

26. (Amended) ~~A~~ The region according to claim 24, wherein the at least one orientation feature is skewed along its major axis.

27. (Amended) ~~A~~ The region according to claim 3, wherein each of the tags includes at least one perspective feature for enabling a perspective distortion of the tag being read to be ascertained.

28. (Amended) ~~A~~ The region according to claim 27, wherein the at least one perspective feature includes at least four sub-features which are not coincident.

29. (Amended) ~~A~~ The region according to claim 3, wherein each tag includes a plurality of tag elements, the first and second identity data each being defined by a plurality of the elements.

30. (Amended) ~~A~~ The region according to claim 29, wherein the tag elements are disposed in one or more arcuate bands around a central region of each tag.

31. (Amended) ~~A~~ The region according to claim 30, wherein there are a plurality of the arcuate bands disposed concentrically with respect to each other.

32. (Amended) ~~A~~ The region according to claim 31, wherein each element takes the form of a dot having a plurality of possible values.

33. (Amended) ~~A~~ The region according to claim 32, wherein the number of possible values is two.

34. (Amended) ~~A~~ The region according to claim 32, wherein when representing one of

the possible values, the tag elements absorb, reflect or fluoresce electromagnetic radiation of a predetermined wavelength or range of wavelengths to a predetermined greater or lesser extent than the surface.

35. (Amended) ~~A~~ The region according to claim 32, wherein the possible values of the tag elements are defined by different relative absorption, reflection or fluorescence of electromagnetic radiation of a predetermined wavelength or range of wavelengths.

36. (Amended) ~~A~~ The region according to claim 32, wherein the tags are not substantially visible to an average unaided human eye under daylight or ambient lighting conditions.

37. (Amended) ~~A~~ The region according to claim 32, wherein the tags are slightly visible to an average unaided human eye under daylight or ambient lighting conditions.

38. (Amended) ~~A~~ The region according to claim 32, wherein the tags are visible to an average unaided human eye under daylight or ambient lighting conditions.

39. (Amended) ~~A~~ The region according to claim 3, wherein the first identity data is represented in a format incorporating redundancy of information.

40. (Amended) ~~A~~ The region according to claim 3, wherein the second identity data is represented in a format incorporating redundancy of information.

41. (Amended) ~~A~~ The region according to claim 1, wherein the ~~tags are printed~~ coded data has been disposed on~~to~~ the surface by ~~means of~~ a printer.

42. (Amended) ~~A~~ The region according to claim 41, wherein the printer is an ink printer.

43. (Amended) ~~A~~ The region according to claim 42, wherein the ~~tags are~~ coded data has been printed using ink that is absorbent or reflective in the ultraviolet spectrum or the infrared spectrum.

44. (Amended) ~~A~~ The region according to claim 41, wherein the additional information has been disposed on the surface by the printer ~~also prints additional information onto the surface~~.

45. (Amended) ~~A~~ The region according to claim 44, wherein the additional information ~~is~~ has been printed onto the surface using colored or monochrome inks.

46. (Amended) ~~A~~ The region according to claim 45, wherein the additional information ~~is~~ has been printed onto the surface using one of the following combinations of colored inks:

CMY;

CMYK;

CMYRGB; and

spot ~~colour~~ color.

47. (Amended) ~~A~~ The region according to claim 2, wherein at least a plurality of the tags are disposed stochastically upon the surface.

48. (Amended) ~~A~~ The region according to claim 47, wherein the first identity data of each of the tags includes position data indicating the tag's position in relation to either the surface or a plurality of the other tags.

49. (Amended) ~~A~~ The region according to claim 48, wherein the tags are disposed in a regular array on the surface.

50. (Amended) ~~A~~ The region according to claim 49, wherein the array is triangular.

51. (Amended) ~~A~~ The region according to claim 50, wherein the tags are tiled over the surface

52. (Amended) ~~A~~ The region according to claim 49, wherein the array is rectangular.

53. (Amended) ~~A~~ The region according to claim 52, wherein the tags are tiled over the surface.

54. (Amended) ~~A~~ The region according to claim 2, further including additional non-tag information disposed on the surface

55. (Amended) ~~A~~ The region according to claim 1, wherein the region is identified with sufficient precision to distinguish the region from 1.5×10^{14} other regions.

56. (Amended) ~~A~~ The region according to claim 1, wherein any 10 millimetre diameter subregion of the region includes sufficient coded data to identify the region.

57. (Amended) ~~A~~ The region according to claim 56, wherein any 10 millimetre diameter subregion of the region includes sufficient information to identify at least one point of the region.

58. (Amended) ~~A~~ The region ~~surface~~, including a region according to any one of the preceding claims.

59. (Amended) A method of producing a surface having a region, the method including the steps of:

(a) defining coded data, the coded data being indicative of:

a region identity associated with the region; and

a plurality of points within the region;

(b) disposing the coded data within a region on the surface; and

(c) disposing additional information on the surface,

wherein the coded data comprises machine-readable data which is substantially inscrutable to the average unaided human,

wherein the additional data comprises human-readable data which is substantially visible to the average unaided human eye,

and wherein the steps of disposing the coded data and disposing the additional information are performed substantially simultaneously.

60. (Amended) ~~A~~ The method according to claim 59, wherein the coded data includes at least one tag, each tag being indicative of the region identity and the position of the tag within the region.

61. (Amended) ~~A~~ The method according to claim 60, wherein each of the tags includes:

first identity data defining a relative position of that tag; and

second identity data identifying the surface.

62. (Amended) ~~A~~ The method according to claim 61, wherein the respective first identity data associated with each tag defines the position of that tag with respect to the surface.

63. (Amended) ~~A~~ The method according to claim 61, wherein the respective first identity data associated with each tag defines a position of that tag with respect to one or more other tags.

64. (Amended) ~~A~~ The method according to claim 59, including the step of providing a substrate upon which the surface is defined, the step being performed at any suitable time in relation to the other steps of the method.

65. (Amended) ~~A~~ The method according to claim 60, wherein step (b) includes the sub-

step (b)(i) of disposing the tags at predetermined positions on the surface.

66. (Amended) ~~A~~ The method according to claim 65, wherein sub-step (b)(i) includes the step of disposing the tags in a regular array on the surface.

67. (Amended) ~~A~~ The method according to claim 65, wherein sub-step (b)(i) includes the step of disposing the tags in a rectangular array on the surface.

68. (Amended) ~~A~~ The method according to claim 66, wherein the step of disposing the tags on the surface includes the sub-step of tiling the tags over the surface.

69. (Amended) ~~A~~ The method according to claim 60, further including the step of adding a common feature to the tags in addition to the second identity data.

70. (Amended) ~~A~~ The method according to claim 69, wherein the common feature is configured to assist location and/or recognition of the tags by associated tag reading apparatus.

71. (Amended) ~~A~~ The method according to claim 69, wherein the common features are represented in a format incorporating redundancy of information.

72. (Amended) ~~A~~ The method according to claim 60, further including the step of providing each of the tags with one or more orientation features for enabling an orientation of the tag being read to be ascertained.

73. (Amended) ~~A~~ The method according to claim 72, wherein the orientation features are represented in a format incorporating redundancy of information.

74. (Amended) ~~A~~ The method according to claim 73, wherein each tag includes a plurality of tag elements, the first and second identity data being defined by a plurality of the

elements.

75. (Amended) ~~A~~ The method according to claim 74, wherein the tag elements are disposed in one or more arcuate bands around a central region of each tag.

76. (Amended) ~~A~~ The method according to claim 75, wherein there are a plurality of the arcuate bands disposed concentrically with respect to each other.

77. (Amended) ~~A~~ The method according to claim 76, wherein each element takes the form of a dot having a plurality of possible values.

78. (Amended) ~~A~~ The method according to claim 77, wherein the number of possible values is two.

79. (Amended) ~~A~~ The method according to claim 77, wherein when representing one of the possible values, the tag elements absorb, reflect or fluoresce electromagnetic radiation of a predetermined wavelength or range of wavelengths to a predetermined greater or lesser extent than the surface.

80. (Amended) ~~A~~ The method according to claim 77, wherein the possible values of the tag elements are defined by different relative absorption, reflection or fluorescence of electromagnetic radiation of a predetermined wavelength or range of wavelengths.

81. (Amended) ~~A~~ The method according to claim 77, wherein the tags are not substantially visible to an average unaided human eye under daylight or ambient lighting conditions.

82. (Amended) ~~A~~ The method according to claim 77, wherein the tags are slightly visible to an average unaided human eye under daylight or ambient lighting conditions.

83. (Amended) ~~A~~ The method according to claim 77, wherein the tags are visible to an average unaided human eye under daylight or ambient lighting conditions.

84. (Amended) ~~A~~ The method according to claim 61, wherein the first identity data is represented in a format incorporating redundancy of information.

85. (Amended) ~~A~~ The method according to claim 61, wherein the second identity data is represented in a format incorporating redundancy of information.

86. (Amended) ~~A~~ The method according to claim ~~60~~ 59, wherein the step of disposing the ~~tags~~ coded data within the region ~~are printed onto~~ on the surface is achieved by ~~means of~~ a printer.

87. (Amended) ~~A~~ The method according to claim 86, wherein the printer is an ink printer.

88. (Amended) ~~A~~ The method according to claim 87, wherein the tags are printed using ink that is absorbent or reflective in the ultraviolet spectrum or the infrared spectrum.

89. (Amended) ~~A~~ The method according to claim 86, wherein the step of disposing the additional information within the region on the surface is achieved by the printer ~~printer also prints additional information onto the surface~~.

90. (Amended) ~~A~~ The method according to claim 89, wherein the additional information is printed onto the surface using colored or monochrome inks.

91. (Amended) ~~A~~ The method according to claim 90, wherein the additional information is printed onto the surface using one of the following combinations of colored inks:

CMY;

CMYK;

CMYRGB; and

spot ~~colour~~ color .

92. (Amended) ~~A~~ The method according to claim 60, wherein at least a plurality of the tags are disposed stochastically upon the surface.

93. (Amended) ~~A~~ The method according to claim 92, wherein the first identity data of each of the tags includes position data indicating the tag's position in relation to either the surface or a plurality of the other tags.

94. (Amended) ~~A~~ The method according to claim 93, wherein the tags are disposed in a regular array on the surface.

95. (Amended) ~~A~~ The method according to claim 94, wherein the array is triangular.

96. (Amended) ~~A~~ The method according to claim 95, wherein the tags are tiled over the surface

97. (Amended) ~~A~~ The method according to claim 94, wherein the array is rectangular.

98. (Amended) ~~A~~ The method according to claim 97, wherein the tags are tiled over the surface.

99. (Amended) ~~A~~ The method according to claim 60, further including additional non-tag information disposed on the surface

100. (Amended) ~~A~~ The method according to claim 59, wherein the region is identified with sufficient precision to distinguish the region from 1.5×10^{14} other regions.

101. (Amended) ~~A~~ The method according to claim 59, wherein any 10 millimetre diameter subregion of the region includes sufficient coded data to identify the region.

102. (Amended) ~~A~~ The method according to claim 101, wherein any 10 millimetre diameter subregion of the region includes sufficient information to identify at least one point of the region.

103. (Amended) ~~A~~ The method according to claim 63, wherein step (b) includes the sub-step of disposing the readable tags on the surface such that the relative spacing of their centres is less than about 12mm.

104. (Amended) ~~A~~ The method according to claim 103, wherein the relative spacing is less than about 3mm.

105. (Amended) ~~A~~ The method according to claim 103, wherein the relative spacing is less than about 1mm.

106. (Amended) ~~A~~ The region according to any one of claims 1 to 3, 7, 8, 18, 24 or 29 to 35, wherein the coded data is machine readable, and the information represented by the coded data is substantially inscrutable to an unaided human.

107. (Amended) ~~A~~ The method according to any one of claims 59 to 61, 69, 72 or 74 to 80, wherein the coded data is machine readable, and the information represented by the coded data is substantially inscrutable to an unaided human.